

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE  
PROGRAM**

**INDICATIVE PROJECT SUMMARIES**

**1999 - 2003**



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF RESOURCE PROTECTION**

**Cynthia Giles, Assistant Commissioner**

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**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE  
PROGRAM**

**INDICATIVE PROJECT SUMMARIES**

**1999 - 2003**

**Massachusetts Executive Office of Environmental Affairs  
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**Worcester, Massachusetts  
December 2002**

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## **INTRODUCTION**

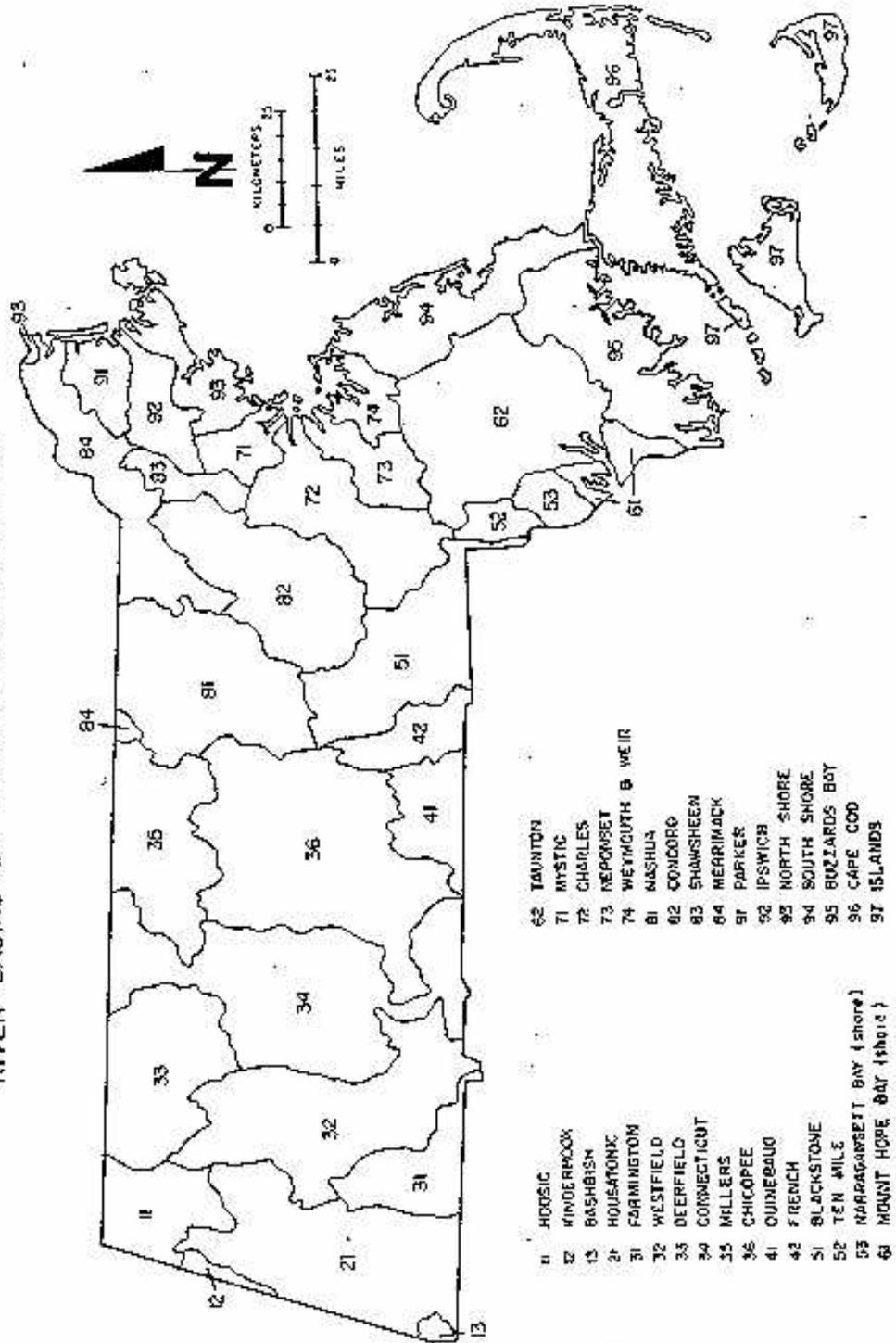
This report presents indicative summaries of 103 Projects financed under the Massachusetts Watershed Initiative Program and administered by the Massachusetts Department of Environmental Protection (DEP) in State fiscal years 1999 through 2003.

Each year EOEAs Watershed Team Leaders, in conjunction with State and Federal agencies, municipal governments and regional planning agencies, universities, local watershed associations, businesses and other groups develop work plans that identify the most important goals for each watershed and the specific projects and programs which are needed to meet those goals.

The Massachusetts Department of Environmental Protection is designated as a “Lead Agency” to implement some of these MWI priority projects identified by the Teams. The Executive Office of Environmental Affairs (EOEA) and its agencies such as the Departments of Environmental Management, Fisheries, Wildlife and Environmental Law Enforcement, Food and Agriculture, and the Metropolitan District Commission and Office of Coastal Zone Management are serving as leads on implementing other projects and activities.

Activities performed for DEP’s watershed priority projects described in this report include hydrologic and water quality monitoring and assessment, habitat assessment, nonpoint source assessment, hydrologic modeling, open space and growth planning, technical assistance and outreach.

# COMMONWEALTH of MASSACHUSETTS RIVER BASINS and COASTAL DRAINAGE AREAS



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-01/MWI**

**PROJECT TITLE:** Beaver Brook Daylighting Feasibility Study

**INVESTIGATOR:** U.S. Army Corps of Engineers - New England District

**LOCATION:** Blackstone River Basin

**DESCRIPTION:** This project will further study the feasibility of restoring or “Daylighting” Beaver Brook in the City of Worcester.

It is proposed that a 3500 foot reach of Beaver Brook presently existing as a culverted channel be replaced by a 16 foot wide open channel. Side slopes and a 50 foot wide riparian corridor would be vegetated with shrubs and trees. Boulders and deflectors would be added to provide instream habitat for fish and other aquatic life. A system of small ponds and marsh would be constructed to improve water quality and provide additional fish and wildlife habitat. Approximately 2 acres of an adjacent parking lot would be restored to provide additional green space.

The additional investigations will address hydraulic issues and concerns relative to potential odor and other water quality problems possibly caused by cross connections or combined sewer overflows.

Specific tasks to be performed include:

1. conduct hydrologic and hydraulic studies to determine the impacts of the proposed project on flooding;
2. establish environmental design features and criteria and prepare preliminary construction drawings;
3. determine environmental benefits and costs of daylighting Beaver Brook, including construction and maintenance costs;
4. address ownership issues; and
5. prepare a preliminary findings report and a final feasibility study report.

**COST:** \$100,000

**FUNDING:** \$50,000 by EOE  
\$50,000 by U.S. ACOE

**DURATION:** 1999 - 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-02/MWI**

**PROJECT TITLE:** Boston Harbor Hydrologic and Water Quality Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Boston Harbor Watershed

**DESCRIPTION:** The purpose of this project is to conduct hydrologic investigations and water quality sampling in support of assessment activities of the Boston Harbor Watershed Team. The information collected will be used to assess water quality conditions in the Mystic, Neponset and Weymouth and Weir River Basins of the Boston Harbor Watershed.

Specific tasks will be to:

1. design a water quality sampling network for the Mystic, Neponset and Weymouth and Weir River Basins;
2. conduct streamflow measurements at multiple sites in the Boston Harbor Watershed and rating the stage – discharge relation; and
3. conduct water quality sampling for nutrients, bacteria and metals and perform field measurements for pH, dissolved oxygen, temperature and specific conductance.

**COST:** \$116,783

**FUNDING:** \$90,000 by EOE  
\$26,783 by USGS

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-03/MWI**

**PROJECT TITLE:** Nutrients, Eutrophication and Harmful Algal Blooms in Buzzards Bay, Massachusetts

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Buzzards Bay

**DESCRIPTION** The purpose of this project is to further analyze water quality and biological samples collected since 1987 in Buzzards Bay. This will be accomplished by completing taxonomic analyses of selected phytoplankton samples and completing analyses and consolidation of nutrient and other data collected.

Specific tasks include:

1. perform quantitative taxonomic analyses of phytoplankton community composition;
2. complete analyses and reduction of nutrient chlorophyll and other water quality data;
3. conduct a formal presentation to the EOEA Buzzards Bay Watershed Team and associated watershed partners; and
4. prepare a draft and summary report which includes data tables and graphics for nutrients, plankton and associated data.

**COST:** \$70,060

**FUNDING:** 100% by EOEA

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-04/MWI**

**PROJECT TITLE:** Implementation of Municipal and Business Outreach Strategy

**INVESTIGATOR:** National Park Service

**LOCATION:** Merrimack River Basin

**DESCRIPTION:** This project will continue work begun in 1998 to reach out to the municipalities and to businesses in the Merrimack River Basin and develop an awareness and involvement by building partnerships.

Specifically, the following tasks will be performed:

1. identify key municipal officials in each of 31 communities and businesses and create a working database of contacts;
2. prepare a slide presentation highlighting the Merrimack River Watershed;
3. prepare printed materials about the watershed, the Watershed Team, and the Massachusetts Watershed Initiative;
4. conduct a series of presentations to municipal boards, community and business groups; and
5. prepare and disseminate a newsletter highlighting the status of work done as part of the Merrimack Watershed Team effort.

**COST:** \$53,000

**FUNDING:** \$27,000 by EOEA  
\$26,000 by the NPS and Merrimack River Watershed Council

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-05/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will begin to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks will include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations for further investigation.

**COST:** \$80,000

**FUNDING:** \$50,000 by EOE  
\$25,000 by DEP  
\$ 5,000 by DEM

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-06/MWI**

**PROJECT TITLE:** GIS Data Layers of Stormdrain Systems and Solutions to Hot Spot Problems

**INVESTIGATOR:** National Park Service

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** The propose of this project is to continue mapping and documenting storm drain system conditions and solve identified nonpoint source pollution problems in the Shawsheen River Basin.

Tasks will include:

1. review of existing storm drain maps and related information for each town;
2. recruitment and training of volunteers to locate storm drain and outlet pipes and record conditions;
3. collecting of GPS data for storm drains and outlet pipes;
4. preparing a storm drain report and GIS map for distribution to towns;
5. locating, mapping and describing “hot spot” nonpoint source pollution problems/sources;
6. preparing a draft and final action plan for resolving problems; and
7. implementing action plan

**COST:** \$ 73,500

**FUNDING:** \$35,000 by EOE  
\$38,500 by NPS and Merrimack River Watershed Council

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-07/MWI**

**PROJECT TITLE:** Establishment of a Technical Advisory Committee for the Eel River Nutrient Management Plan

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** The purpose of this project is to establish and convene a multi-disciplinary Eel River Technical Advisory Committee (TAC) to assist resource managers evaluate nutrient related issues affecting the Eel River System in Plymouth.

The overall goal of the Eel River TAC is to help evaluate the nutrient related ecological health of the Eel River System under current conditions and to determine its potential change under projected alterations in nutrient loading.

Tasks of this project include:

1. establishment of multi-disciplinary Eel River Technical Advisory Committee;
2. chair the TAC schedule, coordinate and conduct formal TAC meetings;
3. preparation of a report of the consensus of the TAC with recommendations.

**COST:** \$20,000

**FUNDING:** 100% by EOE A

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-08/MWI**

**PROJECT TITLE:** An Assessment of Contamination of Coles Brook, Seekonk

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Ten Mile River Basin

**DESCRIPTION:** This project will investigate the source of bacterial contamination in Coles Brook, a public water supply source for the town of Seekonk.

An assessment of potential nonpoint source pollution in the Coles Brook Watershed within the Zone 2 of public water supply wells will be performed.

The study will be conducted in cooperation with the Seekonk Water District, National Resource Conservation Service and EOEAs Ten Mile River Watershed Team.

Tasks will include:

1. develop a GIS map of the surface waters of Coles Brook including the location of public water supply wells;
2. preparation of a Quality Assurance Project Plan (QAPP);
3. conduct water quality sampling during wet and dry weather conditions;
4. development of outreach materials,
5. assist project partners develop management recommendations; and
6. preparation of a final project assessment report and recommendations.

**COST:** \$10,000

**FUNDING:** 100% by EOEAs

**DURATION:** 1999

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-09/MWI**

**PROJECT TITLE:** Assabet River Total Maximum Daily Load (TMDL) Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Assabet River.

Specific tasks will be to:

1. establish of an Assabet TMDL Technical Advisory Committee;
2. conduct a review and analysis of existing data on water quality, aquatic plants, algae;
3. perform a review of selected water quality models for use as potential tools for allocating nutrient loads;
4. develop a Quality Assurance Project Plan (QAPP);
5. conduct water quality sampling for nutrients under dry and wet weather conditions;
6. conduct biological sampling for aquatic plants and algae;
7. conduct sediment sampling; and
8. train citizen volunteer monitors.

**COST:** \$85,500

**FUNDING:** 100% by EOE A

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-10/MWI**

**PROJECT TITLE:** Hudson and Housatonic Watersheds Stormwater Assessment Project

**INVESTIGATOR:** Berkshire Regional Planning Commission

**LOCATION:** Hudson and Housatonic River Basins

**DESCRIPTION:** This project will identify and assess the extent of stormwater problems in the Hudson and Housatonic River Basins and identify potential solutions or projects for remediation.

Assessment activities in the Hudson Basin will focus on identifying vulnerable subwatersheds while work in the Housatonic Basin will focus on protecting lakes and ponds from identified stormwater problems.

The following tasks will be performed:

1. Organize an advisory group to help guide the project and represent local concerns;
2. Develop and apply a decision-making process for prioritizing subwatersheds and lakesheds based on their vulnerability to storm water problems;
3. Develop a process for identifying viable stormwater remediation projects;
4. Organize and present a workshop for municipal officials and others; and
5. prepare a final report summarizing findings.

**COST:** \$100,445

**FUNDING:** 100% by EOEA

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-11/MWI**

**PROJECT TITLE:** Comprehensive Data Assessment in Selected Subwatersheds of the North Coastal Watershed

**INVESTIGATOR:** Salem Sound 2000

**LOCATION:** North Coastal Watershed

**DESCRIPTION:** The purpose of this project is to review and compile water quality and other information in four subwatersheds in the North Coastal drainage area and identify data gaps.

The information will be used to help determine Total Maximum Daily Loads (TMDL's) for each identified subwatershed.

The findings of this study will be presented to local municipal employees and officials from planning boards, selectmen, city councils, Departments of Public Works and Boards of Health to help establish a link between the general concept of nonpoint source pollution and solutions to specific problems located within their respective communities.

Tasks include:

1. selections of four subwatersheds which exhibit a common water quality or resource problems;
2. compilation and interpretation of pertinent data sets including water quality, land use and bioassessments;
3. identification of data gaps to be addressed in the next watershed cycle;
4. presentation of findings in coordination with local watershed associations and other stakeholder groups; and
5. preparation of a final report summarizing project activities.

**COST:** \$49,992

**FUNDING:** 100% by EOEI

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-12/MWI**

**PROJECT TITLE:** Pilot Project for Identification of Unmapped Tributaries and Intermittent Streams

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** The purpose of this project is to develop and test statistically-based hydrologic methodologies that can be used to better identify perennial and intermittent streams as applicable to the Massachusetts Rivers Protection Act.

Specific tasks will include:

1. develop regression equations (i.e., statistical relation) relating the probability of average zero-flow to basin characteristics (e.g., drainage area) on a statewide basis for application to South Coastal Streams;
2. conduct field verification of no-flow points on selected streams as estimated by the zero flow equation developed; and
3. develop a digital data layer of intermittent and perennial streams.

**COST:** \$86,852

**FUNDING:** \$73,500 by EOE  
\$13,352 by USGS

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-13/MWI**

**PROJECT TITLE:** Pilot Project for Technical Assistance to Local Officials on Environmental Strategies to Preserve, Protect and Restore Natural Resources

**INVESTIGATOR:** Metropolitan Area Planning Council

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** This project will provide technical assistance to local officials to protect and restore watershed resources, including water quality, habitat protection, and open space/recreation resources. The project will provide technical documents and circuit-rider planning assistance to communities, and provide residential build-out analyses for selected towns in the watershed.

The following tasks will be performed:

1. prepare residential build-out analyses for two communities;
2. review local master plans and comprehensive plans, and open space plans and land acquisition priorities for Cohasset, Duxbury, Hanover, Marshfield, Norwell, Pembroke, Rockland and Scituate and make recommendations; and
3. provide technical assistance to Kingston, Pembroke and Plymouth for identifying opportunities for restoration to remedy major nonpoint source problem areas to foster regional coordination of management and protection provisions between communities, and to integrate water quality protection with local and regional planning.

**COST:** \$50,000

**FUNDING:** 100% by EOE A

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-14/MWI**

**PROEJCT TITLE:** An Assessment of Causes of Water Quality Impairment in the Westfield River

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Westfield River Basin

**DESCRIPTION:** The purpose of this project is to identify and assess the causes and sources of water quality impairment in the Westfield River. This will include water quality sampling during dry and wet weather conditions and aquatic macroinvertebrate and periphyton assessments.

Specific tasks include:

1. develop a Quality Assurance Project Plan (QAPP);
2. conduct water quality sampling for nitrate-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, total and dissolved phosphorus, fecal coliform bacteria, dissolved oxygen, turbidity, specific conductance, pH, and temperature;
3. conduct biological assessments for aquatic macroinvertebrates and periphyton communities; and
4. identification of pollutant sources in descriptive and graphic form.

**COST:** \$49,900

**FUNDING:** 100% of EOE A

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-15/MWI**

**PROJECT TITLE:** An Investigation of Stormwater and Mainstem Loads of Bacteria, Nutrients and Selected Metals in the Lower Charles River Watershed

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Charles River Basin

**DESCRIPTION:** This project will collect water quality and streamflow in the Lower Charles River and tributaries. The information will be used to help focus regulatory and mitigation efforts on those practices having the most negative impact on water quality.

The objectives of this study are to:

1. determine annual and storm-event loads of bacteria, nutrients , and selected metals in the mainstem of the Charles River at the Watertown Dam, and evaluate the representativeness of samples presently being collected at this site by other organizations;
2. measure separate stormwater (non-combined sewer overflow) flows and contaminant loads to the Lower Charles River from the largest four sub-basins, and model the flows and loads generated by the entire Lower Charles Watershed from 3-month and 1-year design storms; and
3. determine contaminant concentrations in the Lower Charles mainstem at selected bridge cross sections immediately following the storm events sampled.

**COST:** \$902,000

**FUNDING:** \$105,937 by EOE  
\$308,000 by Massachusetts Water Resources Authority  
\$260,000 by U.S. Geological Survey  
\$ 19,063 by Department of Environmental Protection  
\$209,000 by U.S. Environmental Protection Agency

**DURATION:** 1999 - 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-16/MWI**

PROJECT TITLE: Technical Assistance for Water Quality Assessment Activities

INVESTIGATOR: Department of Environmental Protection

LOCATION: Statewide Massachusetts

DESCRIPTION: This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality of product before dissemination; and
6. responding to public requests for water resource assessment information.

COST: \$50,000

FUNDING: 100% by EOEAA

DURATION: 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-17/MWI**

**PROJECT TITLE:** Technical Assistance for Water Quality Monitoring Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$50,000

**FUNDING:** 100% by EOEA

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-18/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operate and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and of analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOEI

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-01/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed Phase 2 Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will continue to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks will include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations.

**COST:** \$85,000

**FUNDING:** \$85,000 by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-02MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 2 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will continue to collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Assabet River and begin a sampling program for TMDL analysis in the Sudbury and Concord Rivers.

Specific tasks will be to:

1. update the Quality Assurance Project Plan (QAPP) for the Assabet River and prepare a QAPP for the Sudbury and Concord River sampling;
2. conduct additional water quality and biological sampling in the Assabet River;
3. conduct water quality and biological sampling in the Sudbury and Concord Rivers; and
4. report findings.

**COST:** \$177,500

**FUNDING:** \$127,500 EOE  
\$ 50,000 by USACOE

**DURATION:** 2000-2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-03MWI**

**PROJECT TITLE:** Development of Watershed Management Plans for Rock and Pentucket Ponds

**INVESTIGATOR:** Merrimack Valley Planning Commission

**LOCATION:** Parker River Basin

**DESCRIPTION:** The purpose of this project is to prepare action oriented watershed management plans for both Rock and Pentucket ponds in the Parker River watershed.

Specific tasks include:

1. compile and summarize existing data and identify key data gaps;
2. inventory and map key watershed characteristics;
3. assess point and nonpoint source pollution;
4. evaluate existing local land use and pollution control measures;
5. develop comprehensive management recommendations to enhance and protect the water quality for Rock and Pentucket Ponds;
6. conduct a Public Outreach and Education campaign for Watershed Stakeholders including municipalities, shorefront property owners and the public at large and other interested stakeholders; and
7. prepare final report.

**COST:** \$29,850

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-04/MWI**

**PROJECT TITLE:** Quaboag Sub-Basin Nonpoint Source Assessment

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Basin

**DESCRIPTION:** The purpose of this project is to identify ways to protect and improve water quality in the Quaboag Sub-basin, with particular focus on the Wickaboag Pond watershed. This project will provide the link between various land uses and the sources of any water quality problems within the Quaboag Sub-basin.

Specific tasks include:

1. compile and summarize existing data;
2. conduct P8 modeling of nonpoint source pollution;
3. perform water quality monitoring for P8 model calibration;
4. identify sub-basins that are currently impaired as well as those that are projected to have a potential for future water quality impairment; and
5. prepare a final project report.

**COST:** \$24,500

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-05/MWI**

**PROJECT TITLE:** Habitat Assessment for French and Quinebaug Basins

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** French and Quinebaug River Basins

**DESCRIPTION:** The purpose of this project is to conduct habitat assessments and aquatic macroinvertebrate sampling in the French and Quinebaug River Basins.

Specific tasks include:

1. QAPP preparation;
2. map aquatic habitat in up to 50 selected reaches in the French and Quinebaug Rivers for use in future water quality assessment activities;
3. perform macroinvertebrate sampling;
4. conduct water quality sampling and streamflow measurements; and
5. prepare final report.

**COST:** \$15,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-06/MWI**

PROJECT TITLE: Shawsheen Watershed Storm Drain Mapping

INVESTIGATOR: Merrimack River Watershed Council

LOCATION: Shawsheen River Basin

DESCRIPTION: The purpose of this project is to continue and expand on the 1999 Shawsheen watershed storm drain mapping project. Additional storm drains will be located, described and characterized in GIS format according to criteria such as size, slope, percent impervious surface, and land use. Work will be done in partnership with the Shawsheen River Watershed Association.

Specific tasks include:

1. complete locating, mapping, describing and GIS formatting of most if not all storm drain outlets;
2. develop criteria that will assure consistent information is collected on stormwater drainage areas for ranking and characterization relative to flood potential;
3. conduct GIS mapping; and
4. prepare final report.

COST: \$20,000

FUNDING: 100% by EOE A

DURATION: 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-07/MWI**

**PROJECT TITLE:** Boston Harbor Hydrologic and Water Quality Investigations

**INVESTIGATOR:** Neponset River Watershed Association

**LOCATION:** Boston Harbor Basin

**DESCRIPTION:** This project will conduct water quality, biological and hydrologic investigations at selected locations in the Neponset and Mystic River Basins.

Specific tasks include:

1. prepare QAPP;
2. conduct monthly water quality sampling and streamflow measurements;
3. conduct dry and wet weather water quality sampling and streamflow measurements;
4. perform follow-up bracket sampling; and
5. prepare final report.

**COST:** \$40,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-08/MWI**

**PROJECT TITLE:** Targeting and Eliminating Untreated Sewage Discharges

**INVESTIGATOR:** URS Greiner Woodward Clyde

**LOCATION:** North Coastal Basin

**DESCRIPTION:** This project will develop and implement a program to target and eliminate illicit sewer connections in selected sub-watersheds in the North Coastal Basin.

Specific tasks include:

1. prepare a QAPP and conduct sampling to target outfalls that have illicit connections;
2. conduct detailed illicit connection identification in selected sub-watersheds;
3. conduct detailed illicit connection identification and develop an implementation plan for North River sub-watershed; and
4. prepare final project report.

**COST:** \$60,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-09/MWI**

PROJECT TITLE: North Coastal Watershed Setting Priorities at the Sub-Watershed Level

INVESTIGATOR: Salem Sound 2000

LOCATION: North Coastal Basin

DESCRIPTION: This project will host a series of forums in the North River, Saugus River, Gloucester Harbor and Smallpox Brook Sub-watershed to present and prioritize the findings of the previously conducted comprehensive data assessment project.

Specific tasks include:

1. conduct a general public forum on priority setting;
2. conduct two sub-watershed meetings; and
3. prepare a final report.

COST: \$18,010

FUNDING: 100% by EOE A

DURATION: 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-10/MWI**

**PROJECT TITLE:** Miacomet Pond Nutrient Loading Model

**INVESTIGATOR:** Applied Sciences Associates

**LOCATION:** Islands (Nantucket)

**DESCRIPTION:** This project will develop a computer model to support management of Miacomet Pond. The model will support hydrology, water quality, and TMDL studies, development of flood and water quality management strategies and development of hydrologic and water quality monitoring programs.

Specific tasks include:

1. review of documents, data and other relevant information about Miacomet Pond;
2. prepare a QAPP and conduct sampling;
3. conduct modeling and model calibration;
4. conduct project outreach; and
5. prepare final report.

**COST:** \$49,963

**FUNDING:** 100% of EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-11/MWI**

PROJECT TITLE: Technical Assistance for Water Quality Assessment Activities

INVESTIGATOR: Department of Environmental Protection

LOCATION: Statewide Massachusetts

DESCRIPTION: This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality of product before dissemination; and
6. responding to public requests for water resource assessment information.

COST: \$50,000

FUNDING: 100% by EOE A

DURATION: 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-12/MWI**

PROJECT TITLE: Technical Assistance for Water Quality Monitoring Activities

INVESTIGATOR: Department of Environmental Protection

LOCATION: Statewide Massachusetts

DESCRIPTION: This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan developing, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

COST: \$50,000

FUNDING: 100% by EOEA

DURATION: 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-13/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and Biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operator and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-01/MWI**

**PROJECT TITLE:** Shawsheen TMDL Implementation

**INVESTIGATOR:** U.S. Air Force/Hanscom AFB

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** This project will implement recommendations set forth in the Shawsheen River Bacteria Total Maximum Daily Load (TMDL) Analysis developed by Limno-Tech, Inc., in conjunction with the Shawsheen Watershed Team.

Specific tasks include:

1. prepare a Quality Assurance Project Plan (QAPP) for the field sampling and data collection program;
2. collect information on subsurface sewage disposal systems to develop a list of those systems that are potentially failing;
3. conduct wet-weather sampling at selected storm drains to identify potential sources of fecal coliform bacteria;
4. develop BMP recommendations for identified stormwater discharges; and
5. prepare a final project report.

**COST:** \$70,000

**FUNDING:** \$50,000 by EOE  
\$20,000 by U.S. Air Force

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-02/MWI**

**PROJECT TITLE:** Westport River Nonpoint Source Pollution Assessment Project

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Buzzards Bay Watershed

**DESCRIPTION:** This project will conduct an assessment of nonpoint source pollution in the Westport River subwatershed of Buzzards Bay.

Specific tasks include:

1. conduct a comprehensive environmental and land use assessment;
2. map and assess existing and potential nonpoint source pollution;
3. assess local capacity to address nonpoint source pollution impacts;
4. inventory and evaluate stormwater in the Head-of-Westport Area;
5. develop a Quality Assurance Project Plan (QAPP) for water quality and bacteria sampling;
6. develop recommendations and BMP's for nonpoint source pollution remediation; and
7. prepare a final project report.

**COST:** \$49,500

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-03/MWI**

**PROJECT TITLE:** Cape Cod Nutrient Loading Studies

**INVESTIGATOR:** Tetra Tech, Inc.

**LOCATION:** Cape Cod Watershed

**DESCRIPTION:** This project will conduct nutrient loading studies for Back River, Lewis Bay, Parker River and Swan Pond on Cape Cod.

Specific tasks include:

1. review and summarize available hydrologic and nutrient data for each waterbody;
2. delineate the watersheds/subwatershed;
3. conduct flushing studies of selected waterbodies;
4. develop critical nitrogen loads for each waterbody;
5. develop watershed nitrogen management options;
6. conduct public participation and information transfer to stakeholders groups; and
7. prepare final project report.

**COST:** \$95,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-04/MWI**

**PROJECT TITLE:** Chicopee Inventory of Stormwater Structures

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Basin

**DESCRIPTION:** This project will conduct an inventory of stormwater structures in selected communities in the Chicopee River Watershed.

Specific tasks include:

1. conduct a survey in up to fifteen (15) communities to collect available information on stormwater structures;
2. develop an inventory of stormwater structures within the selected communities;
3. conduct water quality and bacteriological sampling at selected storm drains to identify “hot spots”;
4. develop a database of stormwater structures;
5. create a GIS data layer; and
6. prepare a final project report.

**COST:** \$40,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-05/MWI**

**PROJECT TITLE:** Lake Tashmoo and Lake Anthony/Sunset Lake Nutrient Loading Studies

**INVESTIGATOR:** Martha's Vineyard Commission

**LOCATION:** Islands (Martha's Vineyard) Watershed

**DESCRIPTION:** This project will perform nutrient loading studies for Lake Tashmoo and Lake Anthony/Sunset Lake complex.

Specific tasks include:

1. review available data and identify data gaps;
2. prepare a Quality Assurance Project Plan (QAPP) for the field sampling and data collection program;
3. delineate watershed contributing areas for Lake Anthony/Sunset Lake and Lake Tashmoo;
4. map existing contributing area land uses;
5. install tide gages to collect information on flushing rates;
6. conduct public education and outreach; and
7. prepare final project reports for each waterbody identifying watershed management strategies.

**COST:** \$45,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-06/MWI**

**PROJECT TITLE:** Narragansett and Mount Hope Bays and Ten Mile Basin  
Nonpoint Source Pollution Assessment

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Narragansett Bay, Mount Hope Bay and Ten Mile River  
Basin

**DESCRIPTION:** This project will conduct an assessment of nonpoint source  
pollution in the Narragansett and Mount Hope Bays and Ten  
Mile River Basin and collect nutrient and bacteria data on the Palmer  
River to help develop a TMDL.

Specific tasks include:

1. conduct a comprehensive environmental and land use  
assessment;
2. inventory, map and assess historic, existing and potential  
nonpoint source pollution sources;
3. assess local capacity to address nonpoint source pollution  
impacts;
4. evaluate and model pollutant loadings in the Ten Mile  
and Palmer River Watersheds;
5. develop a Quality Assurance Project Plan (QAPP) for the  
water quality sampling and field investigations;
6. collect data to develop a TMDL for the Palmer River;
7. conduct public meetings; and
8. prepare a comprehensive nonpoint source pollution  
management plan.

**COST:** \$197,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-07/MWI**

**PROJECT TITLE:** South Coastal Nonpoint Source Assessment Project

**INVESTIGATOR:** GeoSyntec

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** This project will conduct a comprehensive nonpoint source pollution assessment in the towns of Plymouth, Kingston, and Pembroke.

Specific tasks include:

1. establish a water quality task force and public awareness panel;
2. acquire and update GIS Land Use and Orthophoto Maps for the study area;
3. identify stormwater structures and impervious surface areas within each town;
4. review and assess community-level resource protection programs;
5. assess local water quality protection measures; and
6. prepare a final web-based project report and GIS Maps.

**COST:** \$40,000

**FUNDING:** 100% of EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-08/MWI**

PROJECT TITLE: Shawsheen River Storm Drain Monitoring

INVESTIGATOR: Environmental Science Services, Inc.

LOCATION: Shawsheen River Basin

DESCRIPTION: This project will conduct water quality and bacteriological sampling and habitat assessment at selected locations in the Shawsheen River Basin.

Specific tasks include:

1. develop a Quality Assurance Project Plan (QAPP);
2. conduct water quality and bacteriological sampling and habitat assessment at 20 sites in accordance with the approved QAPP;
3. present the findings of the study; and
4. prepare a final project report.

COST: \$20,000

FUNDING: 100% by EOE A

DURATION: 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-09/MWI**

**PROJECT TITLE:** Technical Assistance for Stormwater Phase II Compliance

**INVESTIGATOR:** Vanasse Hangen Brustlin, Inc.

**LOCATION:** North Coastal Watershed

**DESCRIPTION:** This project will provide planning and technical assistance for stormwater Phase II compliance.

Specific tasks include:

1. assist Lynn, Peabody, and Malden in assessing their current status relative to stormwater Phase II regulations;
2. assist Beverly, Danvers, Gloucester, Marblehead, Salem, Saugus, Swampscott, Lynnfield, Melrose, Reading, Wakefield, and Revere on Stormwater Phase II Planning;
3. conduct workshops; and
4. prepare final project report.

**COST:** \$47,305

**FUNDING:** 100% by EOEa

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-10/MWI**

**PROJECT TITLE:** Dirt Road Maintenance and Repair Pilot and Feasibility Study

**INVESTIGATOR:** Berkshire Regional Planning Commission

**LOCATION:** Farmington, Hudson, Housatonic, Deerfield, Westfield Basins

**DESCRIPTION:** This project will demonstrate the application of a Generic Notice of Intent (GNOI) for use on road repair and maintenance work.

Specific tasks include:

1. identify one community in each of the Farmington, Hudson, Housatonic, Deerfield and Westfield Watersheds of Berkshire County for demonstration;
2. apply a GNOI in the five communities for road repair and maintenance activities;
3. organize and present workshops on GNOI implementation;
4. research BMP award recognition programs and develop criteria for a local model; and
5. prepare a final project report.

**COST:** \$35,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-11/MWI**

**PROJECT TITLE:** Madaket Harbor Circulation Study

**INVESTIGATOR:** Applied Science Services, Inc.

**LOCATION:** Islands (Nantucket) Watershed

**DESCRIPTION:** This project will develop and apply a hydrodynamic tidal model for the Madaket Harbor System on Nantucket Island.

Specific tasks include:

1. conduct data acquisition and review of existing information;
2. develop a Quality Assurance Project Plan (QAPP) for the hydrologic and water quality data collection program;
3. perform sampling and data collection in accordance with approved QAPP;
4. apply and calibrate the hydrodynamic and flushing models to the Madaket Harbor/Long Pond System; and
5. prepare a final project report.

**COST:** \$49,983

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-12/MWI**

**PROJECT TITLE:** Hudson and Housatonic Watershed Teams Laboratory Services

**INVESTIGATOR:** Berkshire Enviro-Labs, Inc.

**LOCATION:** Hudson and Housatonic River Basins

**DESCRIPTION:** This project will provide laboratory services to the Hudson and Housatonic Watershed Teams for selected chemical and bacteriological constituents on river and lake samples collected by volunteer monitors.

Specific tasks include:

1. analyze samples for chemical and bacteriological constituents including total phosphorus and total and fecal coliform bacteria;
2. provide verbal and written analyses reports; and
3. provide a summary report of all analyses.

**COST:** \$10,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-13/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed Phase 3 Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will continue to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations.

**COST:** \$73,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-14/MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 3 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Sudbury and Concord Rivers.

Specific tasks will be to:

1. prepare a Quality Assurance Project Plan (QAPP) for the Sudbury and Concord River sampling;
2. conduct water quality and biological sampling in the Sudbury and Concord Rivers; and
3. prepare a final report.

**COST:** \$175,000

**FUNDING:** \$87,500 by EOE  
\$87,500 by USACOE

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-15/MWI**

**PROJECT TITLE:** Western Regional Watersheds Wetlands Circuit Rider

**INVESTIGATOR:** Terry Eucker

**LOCATION:** Deerfield, Westfield, Farmington, Millers River Basins

**DESCRIPTION:** This contractor will provide technical assistance on the Massachusetts Wetlands Protection Act (as amended by the Rivers Protection Act) to conservation commissions and other municipal officials within the western regional watersheds.

Specific duties include:

1. meeting with boards, commissions and conservation agents to assist them in interpreting regulations, policies and guidance;
2. preparing educational materials and conducting training workshops;
3. responding to requests for information; and
4. attending meetings with watershed teams.

**COST:** \$40,500

**FUNDING:** 100% by EOE A

**DURATION:** 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-16/MWI**

PROJECT TITLE: Statewide Monitoring Coordinators

INVESTIGATOR: Undetermined

LOCATION: Statewide

DESCRIPTION: These contractors will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOE and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams, and the general public; and
9. participate in the development of “Year 3” water quality assessments in assigned watersheds.

COST: \$200,000

FUNDING: 100% by EOE

DURATION: 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-17/MWI**

**PROJECT TITLE:** Technical Support Services for Central Regional Watershed Teams

**INVESTIGATOR:** Undetermined

**LOCATION:** Concord, French and Quinebaug, Nashua, Millers, Chicopee River Basins

**DESCRIPTION:** This contractor will provide technical support services to the watershed teams in the Central Region.

Specific duties will include:

1. assist with SMART monitoring;
2. coordinate watershed-related activities between the watershed teams and DEP's CERO; and
3. participate in watershed team meetings.

**COST:** \$25,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-18/MWI**

**PROJECT TITLE:** Technical Support Services for Water Quality Assessment Activities

**INVESTIGATOR:** Mollie Weinstein

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality or product before dissemination; and
6. responding to public requests for water resource assessment information.

**COST:** \$45,892

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-19/MWI**

**PROJECT TITLE:** Technical Support Services for Water Quality and Laboratory Activities

**INVESTIGATOR:** Richard Chase

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$37,553

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-20/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operate and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and of analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-01/MWI**

**PROJECT TITLE:** Alewife Brook/Mystic River Assessment and Action Plan

**INVESTIGATOR:** Mystic River Watershed Association

**LOCATION:** Boston Harbor Watershed

**DESCRIPTION:** This project will catalog information to assess water quality conditions in and near Alewife Brook and downstream impacts to the Mystic River and prepare a Action Plan that prioritizes issues and concerns and sets forth a schedule for action.

Specific tasks will include:

1. conduct literature and data review of past and current studies;
2. summarize findings and identify and prioritize issues and data gaps;
3. prepare Action Plan to address and prioritize water quality, land use habitat, recreation and other issues; and
4. meet with Boston Harbor Watershed Team to present progress updates and results of assessment and Action Plan.

**COST:** \$19,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-02/MWI**

**PROJECT TITLE:** Boston Harbor Watershed Water Quality Monitoring Program

**INVESTIGATOR:** Neponset River Watershed Association

**LOCATION:** Boston Harbor Watershed

**DESCRIPTION:** This project will conduct water quality monitoring in the Boston Harbor Watershed to assess water quality conditions and designated uses.

Specific tasks include:

1. prepare quality assurance project plans (QAPP's) for the Mystic, Weymouth and Weir, and Neponset River Sub-Watersheds;
2. recruit and train volunteer monitors;
3. conduct dry weather and wet weather water quality monitoring at selected locations in the Boston Harbor Watershed;
4. meet with Boston Harbor Watershed Team to present progress updates; and
5. prepare final project report.

**COST:** \$40,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-03/MWI**

**PROJECT TITLE:** Slocums and Little River Flushing Studies

**INVESTIGATOR:** Applied Coastal Research and Engineering, Inc.

**LOCATION:** Buzzards Bay Watershed

**DESCRIPTION:** This project will conduct detailed flushing and particle tracking studies of the Slocums River and Little River Systems for use in developing Total Maximum Daily Loads (TMDL).

Tasks include:

1. develop a Quality Assurance Project Plan (QAPP) for field collections;
2. conduct tidal flushing studies in each embayment system by collecting tide data, bathymetric data, and other data such as streamflow;
3. develop, calibrate and apply hydrodynamic model for the Slocums River and Little River Systems;
4. conduct Particle Tracking Modeling to quantify Slocums River discharge on Little River;
5. meet with Buzzards Bay Watershed Team to present progress updates; and
6. prepare final project report on studies.

**COST:** \$69,736

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-04/MWI**

**PROJECT TITLE:** Cape Cod Comprehensive Regional Wastewater Management Strategy

**INVESTIGATOR:** Cape Cod Commission

**LOCATION:** Cape Cod Watershed

**DESCRIPTION:** This project will compile existing data and develop an outreach plan to help facilitate community involvement and interest in regional wastewater planning and implementation on Cape Cod by identifying lakes, ponds, rivers and coastal embayments; public water supply wells, their watersheds and their sensitivity to wastewater contaminants, and reviewing available projections of wastewater flows with the potential to impact these resources; reviewing potential centralized and community wastewater discharge locations region-wide, identify down-gradient sensitive receptors and potential discharge capacity; facilitating community involvement and transfer findings through regulating, technical and planning discussions, and other means.

Specific tasks include:

1. create a Wastewater Implementation Committee;
2. compile and analyze regional wastewater planning data;
3. conduct a case study of a selected town or sub-watershed to develop a model wastewater management district with various legal and institutional implementation procedures; and
4. meet with Cape Cod Watershed Team to present progress updates; and
5. prepare a final project report.

**COST:** \$75,000

**FUNDING:** \$50,000 by EOE  
\$25,000 by Cape Cod Commission

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-05/MWI**

**PROJECT TITLE:** Upper Charles River Watershed Stormwater Assessment Project

**INVESTIGATOR:** Charles River Watershed Association

**LOCATION:** Charles River Watershed

**DESCRIPTION:** This project will review and assess stormwater programs in the 12 communities in the upper Charles River Watershed by determining current stormwater management practices related to water quality and quantity, identifying potential practices that could be implemented to increase groundwater recharge and improve water quality and habitat and identifying priority areas of problem stormwater discharges.

Specifically, this project will:

1. evaluate individual community stormwater activities to discern current stormwater collection and treatment practices;
2. identify, map, and prioritize stormwater discharges an GIS as related to overall contribution to water quality and quantity degradation;
3. prepare a final report to include a town by town summary identifying where opportunities exist to improve stormwater management, possible stormwater BMP retrofit study areas, and “off-the-shelf” model codes and ordinances for use; and
4. meet with Charles Watershed Team to present progress updates.

**COST:** \$49,956

**FUNDING:** 100% EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-06/MWI**

**PROJECT TITLE:** Chicopee River Watershed Water Quality and Stormwater Monitoring

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Watershed

**DESCRIPTION:** This project will assess water quality in the Chicopee River Watershed to better document water quality conditions and to identify sources of impairment.

Specific tasks include:

1. compile and review historical data;
2. develop a Quality Assurance Project Plan (QAPP);
3. conduct wet-weather and dry-weather water quality sampling at selected sites for pH, conductivity, dissolved oxygen, temperature, turbidity, total phosphorus, nitrogen, fecal coliform bacteria and E. coli bacteria;
4. assess the results from EOEA's InfraRed (IR) study including an evaluation of the adequacy of the Standard Operating Procedures (SOPs) used in collecting IR images;
5. meet with Chicopee Watershed Team to present progress updates; and
6. prepare a final project report and an Action Plan identifying and prioritizing pollution sources and setting forth recommendations for remedial actions.

**COST:** \$47,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-07/MWI**

**PROJECT TITLE:** Deerfield River Watershed Municipal Landfill Assessment

**INVESTIGATOR:** Fuss & O'Neill

**LOCATION:** Deerfield River Watershed

**DESCRIPTION:** This project will identify and map all recent and historic municipal landfills in the Deerfield River Watershed.

Information on landfill characteristics, status and history will be gathered and used to prioritize risk of each site to a variety of sensitive receptors.

Tasks include:

1. identify and list all historic and current municipal landfill sites by reviewing state and municipal files and records;
2. describe each landfill based on its proximity to sensitive receptors such as surface water resources, public and private drinking water supplies and public recreation sites and in addition to surrounding topography, vegetation, soils and surficial geology;
3. map the location of all landfill sites on GIS using GPS technology and develop GIS maps to include hydrology, critical habitats, local and major roadways, public and private water supplies, nearby public recreation sites and topography and surficial geology;
4. prioritize and rank landfill sites according to potential risk for contamination;
5. identify eight of the most sensitive sites and conduct field reconnaissance to further evaluate the potential for contamination;
6. develop a sampling plan to conduct screening-level monitoring of leachate, receiving water and/or shallow groundwater of eight landfill sites for metals and primary organics;
7. meet with Deerfield Watershed Team to present progress updates; and
8. prepare final project report and develop recommendations for the towns to consider for managing the identified landfills.

**COST:** \$38,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-08/MWI**

**PROJECT TITLE:** Housatonic River Watershed Water Quality Monitoring and Storm Drain Awareness Program

**INVESTIGATOR:** Housatonic Valley Association, Inc.

**LOCATION:** Housatonic River Watershed

**DESCRIPTION:** This project will develop stream teams, conduct water quality monitoring and develop a storm drain awareness program in the Housatonic River Watershed.

Specifically this project will:

1. develop stream teams in Stockbridge, Sheffield and Great Barrington;
2. develop a Berkshire County Storm Drain Awareness Program and related informational brochures and Power Point presentations;
3. develop a Quality Assurance Project Plan (QAPP) and conduct water quality monitoring at selected locations on the West Branch Housatonic River to assess water quality conditions;
4. meet with Housatonic Watershed Team to present progress updates; and
5. prepare final project report.

**COST:** \$30,000

**FUNDING:** \$25,000 by EOE  
\$5,000 by Housatonic Valley Association

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-09/MWI**

**PROJECT TITLE:** Hudson River Watershed Water Quality Monitoring Program

**INVESTIGATOR:** Hoosic River Watershed Association, Inc.

**LOCATION:** Hudson River Watershed

**DESCRIPTION:** This project will conduct water quality monitoring in the Massachusetts portion of the Hoosic River Watershed to identify water quality issues and concerns and recommend remedial actions.

Specific tasks will include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. recruit and train volunteers and interns;
3. conduct wet weather and dry weather water quality surveys;
4. prepare a final report of findings including an Action Plan identifying and prioritizing water quality issues and setting forth recommendations for remedial actions; and
5. meet with Hudson Watershed Team to present progress updates.

**COST:** \$25,000

**FUNDING:** \$15,000 by EOE  
\$10,000 by Hoosic River Watershed Association

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-10/MWI**

**PROJECT TITLE:** Martha's Vineyard Source Water Protection Project

**INVESTIGATOR:** Martha's Vineyard Commission

**LOCATION:** Islands Watershed (Martha's Vineyard)

**DESCRIPTION:** This project will identify and assess potential water quality impacts within Zone II's associated with well fields in the towns of Edgartown, Oak Bluffs, and Tisbury.

Tasks include:

1. conduct land use evaluation and develop nitrate-loading evaluations for existing and projected land uses within the Zone II's for the town wells;
2. provide assistance to prioritize lands for protection and control and address management of existing protected lands, particularly the green lands and the Manual F. Correllus State Forest;
3. develop a contingency plan between Edgartown and Oak Bluffs for public water systems;
4. meet with Islands Watershed Team to present progress updates; and
5. prepare a final project report.

**COST:** \$43,900

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-11/MWI**

**PROJECT TITLE:** Nashua River Technical Assistance for Stormwater and Erosion and Sediment Control

**INVESTIGATOR:** Comprehensive Environmental, Inc.

**LOCATION:** Nashua River Watershed

**DESCRIPTION:** This project will provide technical assistance to four selected communities in the Nashua River Watershed addressing stormwater and related erosion and sedimentation issues.

Specific tasks include:

1. identify and document nonpoint source pollution issues specific to stormwater and sedimentation affecting study communities;
2. provide technical assistance to the study communities in developing and implementing best management practices (BMPs);
3. prepare or develop stormwater and erosion and sediment control by-laws/controls specific to each community;
4. conduct a workshop on BMPs specific to addressing stormwater and erosion/sediment issues;
5. meet with Nashua Watershed Team to report progress updates; and
6. prepare a final project report.

**COST:** \$19,900

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-12/MWI**

**PROJECT TITLES:** Shawsheen River Stormdrain Catchment Monitoring

**INVESTIGATOR:** The Louis Berger Group, Inc.

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** This project will conduct sampling of selected storm drains in the Shawsheen River Watershed to identify existing and potential sources of pollution.

Specific tasks include:

1. review existing data and information;
2. develop a Quality Assurance Project Plan (QAPP);
3. conduct dry-weather and wet-weather sampling at 5 stormdrains for Fecal Coliform Bacteria and E. Coli bacteria, and flow;
4. conduct field survey and land use assessment in the catchment areas of the 5 storm drains to identify pollution sources;
5. meet with Shawsheen Watershed Team to present progress updates; and
6. prepare final project report and conceptual designs for BMPs.

**COST:** \$19,900

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-13/MWI**

**PROJECT TITLE:** Vine Brook Comprehensive Bacteria TMDL Study

**INVESTIGATOR:** Merrimack River Watershed Council

**LOCATION:** Shawsheen River Watershed

**DESCRIPTION:** This project will collect data and other information necessary to develop a bacteria TMDL for Vine Brook, a tributary stream to the Shawsheen River.

Tasks include:

1. conduct storm drain mapping and develop GIS map of stormwater outfalls;
2. prepare a Quality Assurance Project Plan (QAPP);
3. conduct dry-weather and wet-weather sampling of selected storm drains for Fecal Coliform and E. Coli bacteria and other parameters;
4. conduct detailed source assessment and identify preliminary BMPs;
5. conduct analysis to identify viable alternatives to control point and nonpoint sources of pathogens and to provide a meaningful evaluation of the feasibility and potential effectiveness of identified alternatives;
6. meet with Shawsheen Watershed Team to present progress updates; and
7. prepare final project report.

**COST:** \$100,000

**FUNDING:** \$80,000 by EOE  
\$20,000 by Merrimack River Watershed Council

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-14/MWI**

**PROJECT TITLE:** Matfield River Sub-Watershed Stormwater Assessment and Plan

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Taunton River Watershed

**DESCRIPTION:** This project will assess stormwater and other nonpoint source pollution contributing to water quality impairment and develop a stormwater management plan including recommendations for remedial actions and best management practices to restore water quality in the Matfield River Sub-Basin of the Taunton River Watershed.

Specific tasks include:

1. review and compile historical data and other available information;
2. develop a Quality Assurance Project Plan (QAPP);
3. conduct wet-weather and dry-weather ambient and stormdrain outfall sampling at selected locations for pH, conductivity, dissolved oxygen, temperature, turbidity, total suspended solids, total phosphorus, nitrogen, fecal coliform bacteria and E. Coli bacteria;
4. assess land use and conduct field surveys for identifying existing and potential nonpoint source pollution including stormwater runoff;
5. review and assess local stormwater control by-laws and policies of targeted communities and make recommendations and/or develop plans for improvements and revisions;
6. prepare outreach and educational materials and conduct workshops on Stormwater Phase II permitting requirements;
7. meet with Taunton Watershed Team to present progress updates; and
8. prepare a stormwater assessment and management plan for the Matfield River Sub-Basin identifying water quality issues and concerns and recommendations for remedial actions and structural and non-structural best management practices (BMPs).

**COST:** \$79,800

**FUNDING:** 100% by EOEAA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-15/MWI**

**PROJECT TITLE:** Pequot Pond Pollution Survey

**INVESTIGATOR:** MacLeod Consultants

**LOCATION:** Westfield River Watershed

**DESCRIPTION:** This project will identify the sources contributing to water quality impairment at Pequot Pond.

Specific tasks include:

1. review and summarize existing data and information;
2. prepare a Quality Assurance Project Plan (QAPP) for water quality and bacteria sampling activities;
3. conduct a watershed survey to identify pollution sources and to develop an Acton Plan for remediation;
4. conduct sampling for fecal coliform bacteria and E. Coli bacteria, and total phosphorus;
5. meet with Westfield Watershed Team to present progress updates; and
6. prepare final project report including recommendations for remedial actions.

**COST:** \$10,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-16/MWI**

**PROJECT TITLE:** Pond Brook Nonpoint Source Remediation Project

**INVESTIGATOR:** MacLeod Consultants

**LOCATION:** Westfield River Watershed

**DESCRIPTION:** This project will implement structural and non-structural best management practices (BMPs) in the East Mountain Country Club areas of Pond Brook to remediate identified nonpoint source pollution contributing to water quality impairment.

Tasks include:

1. develop plans and install a buffer strip or swale;
2. prepare informational materials on nonpoint source pollution targeted at homeowners in the area;
3. conduct a workshop on nonpoint source pollution for area homeowners and local officials;
4. meet with Westfield Watershed Team to report progress updates and to present final project reports; and
5. prepare final report evaluating the project and BMPs implemented.

**COST:** \$14,370

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-17/MWI**

**PROJECT TITLE:** Identification and Mapping of Perennial and Intermittent Streams in the Taunton River Watershed

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Taunton River Watershed

**DESCRIPTION:** This project will identify and map perennial and intermittent streams in the Taunton River Watershed using statistically-based hydrologic methodologies.

Specific tasks include:

1. conduct field verification of no-flow points on selected streams as estimated from regression equations;
2. determine basin characteristics such as drainage area, length of streams, areas of stratified-drift deposits, and mean basin slope; and
3. develop a digital data layer of intermittent and perennial streams.

**COST:** \$20,000

**FUNDING:** 100% by EOEI

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-18/MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 4 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Sudbury) Watershed

**DESCRIPTION:** This project will continue to collect water quality and other information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Sudbury and Concord Rivers.

Tasks include:

1. prepare a Quality Assurance Project Plan (QAPP) for the sampling;
2. conduct water quality and biological sampling in selected tributaries of the Sudbury and Concord Rivers to quantify nonpoint source pollution loads and to identify pollution sources; and
3. prepare a final project report.

**COST:** \$54,000

**FUNDING:** 100% by EOEa

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-19/MWI**

**PROJECT TITLE:** Central Watersheds Wetlands NOI/GIS Pilot Project

**INVESTIGATOR:** Undetermined

**LOCATION:** Central Regional Watershed Wetlands NOI/GIS Pilot Project

**DESCRIPTION:** This project will link a wetland permit application database with DEP's existing Geographic Information System (GIS) to facilitate the identification of trends in development within a selected community and possible impacts to wetlands and surface waters.

Specific tasks include:

1. review files and collect additional geographic data;
2. link wetland permit application database with GIS;
3. identify operational problems with mapping due to existing database and make recommendations for improvements; and
4. prepare a summary report.

**COST:** \$10,000

**FUNDING:** 100% by EOEa

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-20/MWI**

**PROJECT TITLE:** Central Regional Watersheds Coordinator

**INVESTIGATOR:** Undetermined

**LOCATION:** Concord, French and Quinebaug, Nashua, Millers, Chicopee Rivers Basins

**DESCRIPTION:** This contractor will provide technical support services to the watershed teams in the Central Region.

Specific duties will include:

1. assist with SMART monitoring;
2. coordinate watershed-related activities between the watershed teams and DEP's CERO; and
3. participate in watershed team meetings.

**COST:** \$31,200

**FUNDING:** 100% by EOE

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-21/MWI**

**PROJECT TITLE:** Western Regional Watersheds Circuit Rider

**INVESTIGATOR:** Susan Gillan

**LOCATION:** Deerfield, Westfield, Farmington, Millers River Basins

**DESCRIPTION:** This contractor will provide technical assistance on the Massachusetts Wetlands Protection Act (as amended by the Rivers Protection Act) to conservation commissions and other municipal officials within the western regional watersheds.

Specific duties include:

1. meeting with boards, commissions and conservation agents to assist them in interpreting regulations, policies and guidance;
2. preparing educational materials and conducting training workshops;
3. responding to requests for information; and
4. attending meetings with watershed teams.

**COST:** \$54,000

**FUNDING:** 100% by EOE

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-21/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Watershed Assessments

**INVESTIGATOR:** Mollie Weinstein

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality or product before dissemination; and
6. responding to public requests for water resource assessment information.

**COST:** \$50,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-23/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Monitoring Activities

**INVESTIGATOR:** Richard Chase

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$50,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-24/MWI**

**PROJECT TITLE:** Statewide Monitoring Coordinators

**INVESTIGATORS:** James Blair, Susan Connors, Stella Kiras, Peter Mitchell, Katie O'Brien

**LOCATION:** Statewide

**DESCRIPTION:** These contractors will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review "Year 1" watershed team activities and determine monitoring data gaps that can be filled in "Year 2";
2. review the state's 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOEAs and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3" water quality assessments in assigned watersheds.

**COST:** \$250,000

**FUNDING:** 100% by EOEAs

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 02-25/MWI**

**PROJECT TITLE:** Statewide Support for Seasonal Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist with laboratory analysis on other related activities for the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operate and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and of analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-01/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Watershed Assessments

**INVESTIGATOR:** Richard Chase

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$55,100

**FUNDING:** 100% by EOE A

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-02/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Monitoring Activities

**INVESTIGATOR:** Undetermined

**LOCATION:** North Coastal and Other Statewide Watersheds

**DESCRIPTION:** This contractor will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOEA and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3” water quality assessments in assigned watersheds.

**COST:** \$48,277

**FUNDING:** 100% by EOEA

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-03/MWI**

PROJECT TITLE: Statewide Technical Assistance for Monitoring Activities  
INVESTIGATOR: Susan Connors  
LOCATION: Charles River and Other Statewide Watersheds  
DESCRIPTION: This contractor will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOE and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3” water quality assessments in assigned watersheds.

COST: \$48,277

FUNDING: 100% by EOE

DURATION: 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-04/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Monitoring Activities

**INVESTIGATOR:** Stella Kiras

**LOCATION:** Ten Mile River and Other Statewide Watersheds

**DESCRIPTION:** This contractor will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOEAs and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3” water quality assessments in assigned watersheds.

**COST:** \$48,277

**FUNDING:** 100% by EOEAs

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-05/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Monitoring Activities

**INVESTIGATOR:** Peter Mitchell

**LOCATION:** Housatonic River and Other Statewide Watersheds

**DESCRIPTION:** This contractor will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOEA and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3” water quality assessments in assigned watersheds.

**COST:** \$48,277

**FUNDING:** 100% by EOEA

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-06/MWI**

**PROJECT TITLE:** Statewide Technical Assistance for Monitoring Activities

**INVESTIGATOR:** Katie O'Brien

**LOCATION:** Hudson River and Other Statewide Watersheds

**DESCRIPTION:** This contractor will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review "Year 1" watershed team activities and determine monitoring data gaps that can be filled in "Year 2";
2. review the state's 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOE and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams and the general public; and
9. participate in the development of Year 3" water quality assessments in assigned watersheds.

**COST:** \$48,277

**FUNDING:** 100% by EOE

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-07/MWI**

**PROJECT TITLE:** Statewide Support for Seasonal Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist with laboratory analysis on other related activities for the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;  
assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
4. assist with water data analysis and report preparation;
5. prepare environmental samples for analysis;
6. operate and maintain laboratory instrumentation;
7. maintain accurate records of samples analyzed and of analytical results; and
8. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOEA

**DURATION:** 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-08/MWI**

PROJECT TITLE: Statewide Watershed Team Leader Support Services

INVESTIGATOR: EOEА Watershed Team Leaders

LOCATION: Statewide

DESCRIPTION: This project will provide Administrative Support Services for Christine Duerring, Alice Rojko, William Dunn, Richard Tomczyk, Lynne Welsh, Patti Kellogg, John Desmond, Patrick Rogers, George Zoto, Andrea Langhauser and TBD backfill for North Coastal Watershed Team Leader.

COST: \$25,000

FUNDING: 100% by EOEА

DURATION: 2002 – 2003

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-09/MWI**

**PROJECT TITLE:** Blackstone River Water Quality Monitoring

**INVESTIGATOR:** U.S. National Park Service

**LOCATION:** Blackstone River Watershed

**DESCRIPTION:** This project will coordinate water quality monitoring activities among volunteer monitoring organizations in the Blackstone River Watershed.

Specific tasks include:

1. coordinate and facilitate the development of a Quality Assurance Project Plan (QAPP);
2. provide technical assistance and training to volunteer monitoring groups;
3. coordinate monitoring activities among and between volunteers; and
4. prepare a project report summarizing activities.

**COST:** \$14,500

**FUNDING:** 100% by EOEa

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-10/MWI**

**PROJECT TITLE:** Charles River Sediment Oxygen Demand Study

**INVESTIGATOR:** Charles River Watershed Association

**LOCATION:** Charles River Watershed

**DESCRIPTION:** This project will perform Sediment Oxygen Demand (SOD) and other measurements at selected locations in the upper Charles River Watershed to support the development of a nutrient TMDL.

Tasks include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. conduct SOD and other measurements;
3. meet with the Charles River Watershed Team to present results;  
and
4. prepare a final project report.

**COST:** \$40,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-11/MWI**

**PROJECT TITLE:** Chicopee River TMDL Monitoring

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Watershed

**DESCRIPTION:** This project will conduct water quality sampling at selected stormwater outfalls, tributary streams and other inputs to 303d listed lakes and ponds in the Lower Chicopee River Watershed to better document water quality conditions, to quantify pollutant loads, and to help identify sources of impairment.

Tasks include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. conduct dry and wet weather sampling for nutrients, bacteria and other parameters;
3. prepare a final project report; and
4. meet with the Chicopee River Watershed Team to present results.

**COST:** \$32,500

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-12/MWI**

**PROJECT TITLE:** Connecticut River Bacteria Monitoring

**INVESTIGATOR:** Pioneer Valley Planning Commission

**LOCATION:** Connecticut River Watershed

**DESCRIPTION:** This project will conduct bacteria and other sampling at several locations on the Mainstem Connecticut River and at selected tributary and outfall locations to assess primary and secondary recreational water uses and to help identify sources of water quality impairment.

Tasks include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. conduct dry and wet weather sampling for bacteria and other constituents;
3. prepare a final project report; and
4. meet with the Connecticut River Watershed Team to present findings.

**COST:** \$35,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-13/MWI**

**PROJECT TITLE:** Quinebaug Wetlands NOI/GIS Pilot Project

**INVESTIGATOR:** University of Massachusetts - Amherst

**LOCATION:** Quinebaug River Watershed

**DESCRIPTION:** This project will link a wetland permit application database with DEP's existing Geographic Information System (GIS) to facilitate the identification of trends in development within a selected community and possible impacts to wetlands and surface waters.

Specific tasks include:

1. review files and collect additional geographic data;
2. link wetland permit application database with GIS;
3. identify operational problems with mapping due to existing database and make recommendations for improvements; and
4. prepare a summary report.

**COST:** \$12,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 - 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-14/MWI**

**PROJECT TITLE:** Housatonic River Waters Quality Monitoring

**INVESTIGATOR:** Housatonic Valley Association

**LOCATION:** Housatonic River Watershed

**DESCRIPTION:** This project will conduct water quality sampling at selected locations in the Housatonic River Watershed to assess water quality conditions and to help identify sources of water quality impairment.

Tasks include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. conduct dry and wet weather surveys;
3. analyze samples for temperature, dissolved oxygen, pH, conductivity, turbidity, total suspended solids, total phosphorus, nitrogen and fecal coliform and E. Coli bacteria;
4. prepare a final report including an action plan that identifies and prioritizes issues and concerns and makes recommendations for remedial action; and
5. meet with the Housatonic River Watershed Team.

**COST:** \$10,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-15/MWI**

PROJECT TITLE: Onota Lake Watershed Assessment

INVESTIGATOR: GeoSyntec

LOCATION: Housatonic River Watershed

DESCRIPTION: This project will perform an assessment of current and past aquatic vegetation and nutrient control practices at Onota Lake and develop a lake and watershed management plan targeted at controlling nuisance aquatic vegetation.

Tasks include:

1. conduct two qualitative and quantitative aquatic macrophyte surveys;
2. train volunteers from the Lake Onota Preservation Association in macrophyte identification and mapping;
3. conduct a literature and data review of non-chemical alternatives associated with the management of nuisance and non-native plant species;
4. conduct a lake watershed assessment;
5. prepare a final project report and a Lake Watershed Management Plan that includes a proposed strategy for in-lake and watershed monitoring;
6. present findings of project at the Western Massachusetts Water Research Symposium; and
7. meet with the Housatonic Watershed Team.

COST: \$15,000

FUNDING: 100% by EOEI

DURATION: 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-16/MWI**

**PROJECT TITLE:** Hudson River Watershed Water Quality Monitoring

**INVESTIGATOR:** Hoosic River Watershed Association

**LOCATION:** Hudson River Watershed

**DESCRIPTION:** This project will conduct water quality monitoring in the Massachusetts portion of the Hoosic River Watershed to identify water quality issues and concerns and recommend remedial actions.

Specific tasks will include:

1. prepare a Quality Assurance Project Plan (QAPP);
2. recruit and train volunteers and interns;
3. conduct wet weather and dry weather water quality surveys;
4. prepare a final report of findings including an Action Plan identifying and prioritizing water quality issues and setting forth recommendations for remedial actions; and
5. meet with Hudson Watershed Team to present progress updates.

**COST:** \$20,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-17/MWI**

**PROJECT TITLE:** Ipswich and Parker Rivers Water Quality Monitoring

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Ipswich and Parker River Watersheds

**DESCRIPTION:** This project will develop and establish water quality monitoring program at selected locations in the Ipswich and Parker River Watersheds to collect data for trend analysis.

Tasks include:

1. develop a monitoring plan;
2. perform regular sampling at selected sites for various constituents; and
3. report results.

**COST:** \$41,000

**FUNDING:** 100% by EOEa

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-18/MWI**

**PROJECT TITLE:** Martha's Vineyard Great Ponds Water Quality Monitoring

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Martha's Vineyard Island

**DESCRIPTION:** In conjunction with the Massachusetts Estuaries Initiative, this project will perform water quality sampling at Edgartown Great Pond, Tisbury Great Pond, Lagoon Pond, Squibnocket Pond, Chilmark Pond, Mememsha Pond, Lake Tashmoo, and the Sunset Lake/Lake Anthony Complex (Oak Bluffs Harbor) on Martha's Vineyard Island.

Tasks include:

1. develop monitoring plans for each watershed;
2. conduct sampling for nutrients and other parameters;
3. prepare a final project report, and
4. meet with the Islands Watershed Team.

**COST:** \$20,000

**FUNDING:** 100% by EOEa

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-19/MWI**

**PROJECT TITLE:** Madaket Harbor Water Quality Monitoring

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Nantucket Island

**DESCRIPTION:** In conjunction with the Massachusetts Estuaries Initiative, this project will conduct baseline water quality sampling in Madaket Harbor to assess water quality conditions.

Tasks include:

1. develop a monitoring plan;
2. conduct sampling for nutrients and other parameters;
3. review and compile existing and historical data;
4. prepare a final project report; and
5. meet with the Islands Watershed Team.

**COST:** \$47,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-20/MWI**

PROJECT TITLE: North Coastal Sediment Study

INVESTIGATOR: U.S. Geological Survey

LOCATION: North Coastal Watershed

DESCRIPTION: This project will conduct sediment sampling at selected locations in the Salem Sound and Saugus River sub-watersheds to identify areas of contamination.

Tasks include:

1. develop a Quality Assurance Project Plan (QAPP);
2. conduct sediment quality sampling at approximately 20 sites;
3. analyze sediment samples for selected metals, TOC, PAH, PCB, and grain size; and
4. prepare a final project report of findings.

COST: \$30,000

FUNDING: 100% by EOE A

DURATION: 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-21/MWI**

PROJECT TITLE: Elm Brook Storm Drain TMDL Study

INVESTIGATOR: Merrimack River Watershed Council

LOCATION: Shawsheen River Watershed

DESCRIPTION: This project will locate and characterize storm drain outlets in the communities of Lincoln, Concord and Bedford in the Elm Brook sub-watershed of the Shawsheen River Watershed to collect information for Bacteria TMDL development.

Tasks include:

1. develop GIS data layer of storm drain outlets identify locations and sites;
2. prioritize stormwater outfalls with respect to their size, general conditions and potential impacts to water quality;
3. prepare a final project report; and
4. meet with the Shawsheen Watershed Team.

COST: \$10,000

FUNDING: 100% by EOE A

DURATION: 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-22/MWI**

**PROJECT TITLE:** Shawsheen River Streambank Restoration Feasibility Study

**INVESTIGATOR:** Gomez and Sullivan

**LOCATION:** Shawsheen River Watershed

**DESCRIPTION:** This project will locate and determine the cause of streambank erosion along the mainstem Shawsheen River and determine the feasibility and cost for restoring one of the sites identified.

Tasks include:

1. conduct a field investigation of the entire main stem Shawsheen River to identify areas of streambank erosion;
2. identify appropriate best management practices and develop preliminary engineering designs and cost estimates for restoring the eroded streambank in the vicinity of Shawsheen Street and Lowe Street in Tewksbury;
3. assess and evaluate the hydraulic conditions and identify hydraulic improvements at the adjacent railroad easement of the Shawsheen Street and Lowe Street sites;
4. prepare a final project report including a GIS map of the watershed showing all identified erosion sites; and
5. meet with the Shawsheen River Watershed Team.

**COST:** \$20,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-23/MWI**

PROJECT TITLE: Ten Mile River Restoration Feasibility Study

INVESTIGATOR: Gomez and Sullivan

LOCATION: Ten Mile River Watershed

DESCIRPTION: This project will assess and determine the feasibility of implementing opportunities for restoring the water and aesthetic quality in the middle section of the Ten Mile River from the confluence of the Bungay River to the confluence of the Seven Mile River or approximating within the political boundaries of the City of Attleboro.

Tasks include:

1. identify alterations including, dams, stream characterization, flood plain alterations and their impacts;
2. identify and analyze restorative actions and improvements that can be made and their impacts;
3. develop a strategy and timetable for implementing restorative actions and improvements including necessary permits;
4. identify and rank properties that should be targeted for land use changes and/or conservation;
5. develop costs estimates for the various alternatives and their potential economic impacts;
6. evaluate expected water quality and aesthetic improvements;
7. develop a restoration plan that summarizes findings and identifies and recommends measures to minimize sources of pollution and assesses and discusses the feasibility of establishing a greenbelt;
8. identify potential adverse impacts associated with the recommendations; and
9. meet with the Ten Mile River Watershed Team and others.

COST: \$30,000

FUNDING: 100% by EOEA

DURATION: 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-24/MWI**

**PROJECT TITLE:** Narragansett Bay Demonstration Pilot

**INVESTIGATOR:** New England Interstate Water Pollution Control Commission

**LOCATION:** Narragansett Bay Watershed

**DESCRIPTION:** This project will continue to support the effort between the U.S. Environmental Protection Agency, the Commonwealth of Massachusetts and the State of Rhode Island to develop projects targeted at addressing interstate water quality issues in the Narragansett Bay drainage area.

Tasks include:

1. issue second RFR to solicit project proposals;
2. develop and manage projects; and
3. conduct technology and information transfer.

**COST:** \$25,000

**FUNDING:** 100% by EOEI

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-25/MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 5 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Sudbury) Watershed

**DESCRIPTION:** This project will continue to collect water quality and other information for use in developing a Total Maximum Daily Load (TMDL) for nutrients and bacteria in the Sudbury and Concord Rivers.

Tasks include:

1. update the Quality Assurance Project Plan (QAPP);
2. conduct water quality and biological sampling in selected tributaries of the Sudbury and Concord Rivers to quantify nonpoint source pollution loads and to identify pollution sources; and
3. prepare a final project report.

**COST:** \$55,000

**FUNDING:** 100% by EOE

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-26/MWI**

**PROJECT TITLE:** Monponsett Pond Hydraulic Study

**INVESTIGATOR:** GeoSyntec

**LOCATION:** Taunton River Watershed

**DESCRIPTION:** This project will evaluate existing conditions and prepare a dam operational plan for Monponsett Pond that will allow flushing to be performed to maintain the biological health of the pond, improve water quality, minimize impacts from on-site septic systems, maintain existing recreational use activities, and ensure that past annual volumes of water can continue to be diverted by the City of Brockton to Silver Lake Reservoir.

1. review legislation enacted in 1964 that allows diversion of waters from Monponsett Pond to Silver Lake through the establishment of minimum flow requirements;
2. identify by GPS locations of existing on-site septic systems and test wells adjacent to the pond.
3. prepare side profile plans that illustrate Monponsett Pond's static water levels, existing on-site septic systems and groundwater levels;
4. review existing water quality and other data;
5. update bathymetric survey of Monponsett Pond;
6. evaluate past and present volume of diversion waters to determine if limits or increases can be made;
7. prepare a final project report that includes an operational plan; and
8. conduct public meetings.

**COST:** \$35,000

**FUNDING:** 100% by EOEAA

**DURATION:** 2003 – 2004

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 03-27/MWI**

**PROJECT TITLE:** Westfield Vegetative Buffer Implementation

**INVESTIGATOR:** Tighe & Bond Engineers

**LOCATION:** Westfield River Watershed

**DESCRIPTION:** This project will work with landowners to implement buffer protection/restoration at selected sites in the Great Brook sub-watershed of the Westfield River Watershed.

Tasks include:

1. identify landowners willing to participate;
2. work with landowners to acquire/implement conservation restrictions of buffer areas;
3. design and implement structural and non-structural BMPs at selected locations;
4. develop materials and conduct public education and outreach;
5. prepare a final project report summarizing findings and evaluating the BMPs implemented; and
6. meet with the Westfield Watershed Team.

**COST:** \$25,000

**FUNDING:** 100% by EOE A

**DURATION:** 2003 – 2004

# Watershed Team Leader Contact List

as of December 2002

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## Watershed Team Leader Contact List

as of December 2002

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as of December 2002

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## Watershed Team Leader Contact List

as of December 2002

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